A Management Plan for Stocked Waters Fisheries within Sport Fish Region III

by

Charles O. Swanton

and

Thomas T. Taube

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mideye to fork	MEF
gram	g	all commonly accepted		mideye to tail fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs.,	standard length	SL
kilogram	kg		AM, PM, etc.	total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D.,	Mathematics, statistics	
meter	m		R.N., etc.	all standard mathematical	
milliliter	mL	at	@	signs, symbols and	
millimeter	mm	compass directions:		abbreviations	
		east	E	alternate hypothesis	H_A
Weights and measures (English)		north	N	base of natural logarithm	e
cubic feet per second	ft ³ /s	south	S	catch per unit effort	CPUE
foot	ft	west	W	coefficient of variation	CV
gallon	gal	copyright	©	common test statistics	$(F, t, \chi^2, etc.)$
inch	in	corporate suffixes:		confidence interval	CI
mile	mi	Company	Co.	correlation coefficient	
nautical mile	nmi	Corporation	Corp.	(multiple)	R
ounce	OZ	Incorporated	Inc.	correlation coefficient	
pound	lb	Limited	Ltd.	(simple)	r
quart	qt	District of Columbia	D.C.	covariance	cov
yard	yd	et alii (and others)	et al.	degree (angular)	0
	•	et cetera (and so forth)	etc.	degrees of freedom	df
Time and temperature		exempli gratia		expected value	E
day	d	(for example)	e.g.	greater than	>
degrees Celsius	°C	Federal Information		greater than or equal to	≥
degrees Fahrenheit	°F	Code	FIC	harvest per unit effort	HPUE
degrees kelvin	K	id est (that is)	i.e.	less than	<
hour	h	latitude or longitude	lat. or long.	less than or equal to	≤
minute	min	monetary symbols		logarithm (natural)	ln
second	S	(U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and		logarithm (specify base)	log ₂ etc.
Physics and chemistry		figures): first three		minute (angular)	1
all atomic symbols		letters	Jan,,Dec	not significant	NS
alternating current	AC	registered trademark	®	null hypothesis	H_{O}
ampere	A	trademark	TM	percent	%
calorie	cal	United States		probability	P
direct current	DC	(adjective)	U.S.	probability of a type I error	
hertz	Hz	United States of		(rejection of the null	
horsepower	hp	America (noun)	USA	hypothesis when true)	α
hydrogen ion activity (negative log of)	рH	U.S.C.	United States Code	probability of a type II error (acceptance of the null	
parts per million	ppm	U.S. state	use two-letter	hypothesis when false)	β
parts per thousand	ppt,		abbreviations	second (angular)	,
	% 0		(e.g., AK, WA)	standard deviation	SD
volts	V			standard error	SE
watts	W			variance	
	•			population	Var
				sample	var
				r ·	

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A MANAGEMENT PLAN FOR STOCKED WATERS FISHERIES WITHIN SPORT FISH REGION III

by

Charles O. Swanton and Thomas T. Taube Alaska Department of Fish and Game, Division of Sport Fish

Alaska Department of Fish and Game Division of Sport Fish, Research and Technical Services 333 Raspberry Road, Anchorage, Alaska, 99518-1565

February 2009

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Charles O. Swanton, Alaska Department of Fish and Game, Division of Sport Fish, Capital Office Park, 1255 W. 8th Street, P.O. Box 25526 Juneau, Alaska 99802-5526

and
Thomas T. Taube,
Alaska Department of Fish and Game, Division of Sport Fish,
1300 College Road, Fairbanks AK 99701, USA

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EXECUTIVE SUMMARY

Within the Sport Fish Division of the Alaska Department of Fish and Game, Region III encompasses the largest area and offers the most diverse recreational angling opportunities within the state of Alaska. Over the last 60 years, angling opportunities in and around urban centers have shifted from fisheries targeting wild stocks to those supported by the Sport Fish Division's stocked waters program. More recently, there has been a pronounced shift in anglers demanding that more diverse angling opportunities be offered within this program. Such demand has resulted in several regulatory proposals submitted to the Board of Fisheries. Unfortunately, an evaluation framework for stocked waters was non-existent. Subsequently, this situation became the catalyst for development of the stocked waters management plan.

The purpose of this plan is to provide the department and Board of Fisheries the capability to manage the stocked waters program to offer a mixture of sport angling opportunity desired by the public. The plan describes three categories of stocked waters fisheries: Regional Management, Conservative Management, and Special Management. Currently the majority of stocked lakes are managed under Regional Management, with two Conservative Management and six Special Management lakes scattered throughout the region in 2008. It is the department's intent that the majority of stocked lakes will remain in the Regional Management category for the foreseeable future unless public demand dictates otherwise. The Regional Management category prescribes a regional background bag limit of 10 fish (all species combined) with only 1 fish greater than 18 inches. This category reverts the background bag limit to levels similar to those implemented in the 1980s.

Key words: Stocked waters, Management Plan, Regional Management, Conservative Management, Special Management, Arctic-Yukon-Kuskokwim, Region III, lake stocking, Upper Copper/Upper Susitna, Lower Tanana River, Chinook salmon, Coho Salmon, Rainbow trout, Grayling, Arctic Char

INTRODUCTION

HISTORICAL REVIEW OF STOCKED WATERS PROGRAM

The practice of stocking fish into Interior Alaska lakes began in 1939 as a means to enhance sport fishing opportunity in the face of an increasing human population. These efforts were directed at introducing both lake trout and rainbow trout into Harding Lake (Doxey 1991). This initial stocking program was expanded with the construction of the Birch Lake hatchery in 1952. Fish from this facility were stocked into Birch Lake, Quartz Lake, Little Harding Lake and numerous others within the Fairbanks, Delta Junction and Glennallen areas. Many of these lakes were first chemically treated with rotenone to remove northern pike Esox lucius and whitefish Coregonus, which were considered less desirable game fish. As success of the stocking program increased, so did the demand for hatchery fish. A second hatchery was constructed at Fire Lake (Southcentral Alaska) in 1954. Additional hatcheries were constructed at Fort Richardson (1966), Elmendorf AFB (1976), and Clear AFB (1980) military installations. All of these hatcheries were constructed on military bases in part due to the availability of heated water which is necessary to accelerate growth of cold water fishes such as rainbow trout Oncorhynchus mykiss, Arctic char Salvelinus alpinus, king Oncorhynchus tshawytscha and coho salmon Oncorhynchus kisutch, and Arctic grayling Thymallus arcticus. Currently the Elmendorf and Fort Richardson hatcheries produce both salmon and resident species that are the mainstay of the contemporary stocked waters program within Interior (Region III) and Southcentral (Region II) Alaska.

DESCRIPTION OF REGION III

Within the Sport Fish Division of the Alaska Department of Fish and Game (ADF&G), Region III is the largest region in the state encompassing over 1,146,000 km² (442,500 m²) of land, and most of the large river systems (Yukon, Kuskokwim, Copper, Colville, Noatak, Kobuk, and Susitna) within Alaska. Contained within this land mass are thousands of lakes and streams and miles of coastline. The regional coastline boundaries extend from Sheldon Point in the southwest, around all of western, northwestern, and northern Alaska to the Canadian border on the Arctic Ocean. The area is very sparsely populated, and is most densely populated in the Tanana River valley. To facilitate management of the vast fishery resources contained within this area, the region is divided into six fishery management areas: 1) the Upper Copper/Upper Susitna Management Area (based in Glennallen); 2) the Upper Tanana River Management Area (based in Fairbanks); 4) the Northwestern/North Slope Management Area (based in Nome/Fairbanks); 5) the Yukon Management Area (based in Fairbanks); and, 6) the Kuskokwim Management Area (based in Bethel/Fairbanks).

LAKE STOCKING POLICY AND HATCHERY OPERATIONS

In 1998 the ADF&G, Sport Fish Division adopted a lake stocking policy (revised in 2008) that dictates how the stocked waters program operates (Appendix D). This policy directs how Division staff will operate relative to planning and permitting, consideration of candidate lakes and water bodies for stocking, genetic concerns relative to wild stocks and a host of other guidelines. This policy is considered the foundation of how the Division's program will operate and what types of fisheries are supported by the program. Currently, nearly the entire fish production for the stocking program comes from two Sport Fish hatcheries operated at Elmendorf AFB and at Fort Richardson. These facilities have been the mainstay of the stocked waters program for approximately 30 years. Unfortunately, owing to a number of operational changes precipitated by the military and the fact that both hatcheries are well beyond their expected operational life, fish production has decreased substantially since 2005. production shortfalls have resulted in adjustments to numbers, species, and types of fish stocked into Region III fisheries. Since the major impacts have not yet made their way into the large fisheries there have been few public complaints relative to these changes. However, planning and construction of replacement facilities is in the initial stages and it is likely that additional reductions in production will occur prior to completion of new hatcheries.

As of February 2007, the Division of Sport Fish has secured \$60 million in bond monies to fund the construction of two new hatcheries to replace the existing Sport Fish hatcheries at Elmendorf AFB and Fort Richardson. The Ruth Burnett Sport Fish Hatchery in Fairbanks began initial construction during the summer of 2007 with substantial completion expected by the fall of 2009. This facility was designed to provide for a doubling of the recent years stocking biomass. The second facility, located in Anchorage, is expected to allow for a 50% increase over recent years stocking biomass in Region II.

STOCKED WATERS FISHERIES

The initial Region III stocked waters program consisted of several lakes proximate to the Birch Lake hatchery. The intent of the program has been and continues to be to shift angler effort from wild stocks to stocked waters. Public input to area management biologists has indicated a

continued increase in demand for additional stocked waters, partially attributed to access limitations and restrictive regulations on wild stocks. There has also been an increased demand for additional ice fishing opportunity at more locations.

In 2008, the stocked waters program consisted of 134 lakes and ponds and one stream (Piledriver Slough) distributed throughout the Interior along the highway system. There are presently 52 stocked waters fisheries within the Lower Tanana River Management Area (Fairbanks), 55 within the Upper Tanana River Management Area (Delta Junction), and 28 stocked waters fisheries within the Upper Copper/Upper Susitna Management Area (Glennallen). These fisheries can be characterized as either Regional Management (bag limits of 10 fish each species), Conservative Management (reduced bag limit), or Special Management lakes (reduced bag limit, length limit, and seasonal closures; Appendix B). There is also further stratification of these waters related to angler effort, size of the drainage, ease of access, and proximity to major human population centers. These sub-categories are Large, Urban, Rural and Remote.

Large stocked waters are defined as lakes (or streams) greater than 250 acres in surface area with heavy angling pressure relative to other systems within the area. Access is via well-established road systems and in some cases multiple access points. Stocking is performed on an annual basis for most species, but alternate year stocking is also conducted. Urban stocked waters are typically characterized by being within short driving distance from a population center and accessed via the road system. These systems receive multiple stockings throughout the year with catchable size fish to accommodate higher levels of angling pressure. Rural stocked waters are located outside of major population centers with either road or short (<2 mile) trail access. These systems generally receive a single stocking of fish per year and are exposed to moderate or low angler pressure. Remote stocked waters are defined by access being afforded by either a long trail or via fixed wing aircraft. These lakes are generally stocked once per year or in some cases in alternate years, with fingerlings.

Overall, there are 126 lakes and 1 stream in the Regional Management category. Of these, there are 4 Large lakes and 1 stream (Birch, Chena, Quartz, and Silver lakes and Piledriver Slough), 21 Urban lakes, 85 Rural lakes, and 16 Remote lakes. There are 2 remote Conservative Management lakes, and 6 Special Management lakes (1 Large, 3 Rural, and 2 Remote). These waters may receive multiple species, size classes and, in some cases, sterile fish. Stocking location, species, and number of fish to stock depends on the type of fishery desired, access to the fishery (remote or road system), productivity of the lake, and whether the lake is landlocked or not (Appendix D).

FISH STOCKING STRATEGIES

There are 6 species of fish that have been or are used within the program: rainbow trout, Arctic char, Arctic grayling, Chinook (king) and coho salmon, and lake trout *Salvelinus namaycush*. There are also four different size groups or life stages: brood stock (Arctic char and rainbow trout only), catchable, sub-catchable, and fingerling.

Rainbow trout are highly sought after by sport fish anglers and comprise the largest portion of the stocking program. Rainbow trout and Arctic grayling are primarily stocked to maintain summer fishing opportunities. Chinook (king) and coho salmon provide both summer and winter fishing opportunities, and Arctic char and lake trout are used to maintain winter fisheries.

Broodstock (age-2 or older and up to 24 inches in length) are stocked into popular urban fisheries that do not grow large fish. Catchable fish (age-1, about 100 grams and 6-8 inches in length) are stocked into waters that have high effort and harvest rates. Sub-catchable fish (typically greater than 20 grams and 5-6 inches in length) are stocked into rural fisheries capable of growing fish to a catchable size. Fingerlings (1 to 4 grams) are stocked into rural and remote waters that support fish growth.

Lake stockings usually begin in mid-May, corresponding to ice out, and continue into October. Timing of lake stocking activities is dependent on species, life stage, and hatchery conditions. Typically, stockings are conducted throughout early summer and fall, when water temperatures are cool, to minimize stress and increase survival.

Within the last 10 years the stocking strategy has become responsive to the increasing demands of the urban high-use fisheries. Catchable fish of all species are the most desired, as they create and support immediate angling opportunities.

CATCH, EFFORT, AND HARVEST PATTERNS

During the late 1970s the ADF&G, Division of Sport Fish began a survey program to estimate catch, effort, and harvest by recreational anglers. These estimates have allowed fishery managers a means by which fishery statistics can be tracked and general fishery trends monitored on an annual basis (Mills 1979). The first survey results published for Region III in 1977 estimated that 174,000 angler days of effort were expended on recreational fishing for all species within the region. This effort accounted for about 15% of the overall effort statewide. From 2003 to 2007, angler effort for the entire region has averaged 214,867 angler days, which represents about 8% of the overall statewide freshwater sport fishing effort (Jennings et al. in prep b). The recent 10-year average (1998–2007) angler effort expended on stocked waters fisheries was approximately 50,000 angler days. The 10-year average catch has been 148,000 fish and the harvest has averaged 47,000 fish of all species. The most recent 5-year average (2003-2007) effort has been 43,000 angler days, which equates to about 22% of entire Region III's sport fish effort. The catch and harvest from the stocked waters program during this period (2003-2007) comprise about 14% of the overall catch and about 27% of the harvest (both stocked and wild fish) for the region. Catch and harvest statistics can vary considerably between years, though in recent years these have remained at approximately half the recent 10-year average, likely due to reduced hatchery production. In 2006 the catch of all species within the region's stocked waters was 86,000 fish, which decreased to 83,000 fish during 2007. Harvest was 25,000 fish in 2006 and increased to 26,000 fish in 2007 (Jennings et al. *in prep a,b*).

In the Lower Tanana River Management Area (Fairbanks Area) there are 4 major stocked fisheries (Birch Lake, Harding Lake, Chena Lake, and Piledriver Slough) which account for the majority of the stocked waters effort (Brase 2006; Doxey 2007). The recent 5-year average (2003–2007) effort has been about 29,000 angler days for all stocked waters, which equates to about 42% of the overall angler effort for the entire management area. Rainbow trout comprise about 58% of the stocked waters total catch, followed by Chinook (king) and coho salmon (16%), Arctic grayling (14%), and Arctic char and lake trout combined (12%). Harvest percentages are similar to catch with rainbow trout comprising about 67% of the stocked waters total harvest, followed by king and coho salmon (18%), Arctic grayling (4%), and Arctic char and lake trout combined (11%).

In the Upper Tanana Management Area (Delta Junction) there is one large stocked fishery (Quartz Lake) (Parker 2006). From 2003 to 2007, the total angler effort expended within this

management area averaged around 27,000 angler days, of which about 24% (6,500 angler days) of the effort was expended at Quartz Lake. Similar to the Lower Tanana Management Area, catch of all stocked species is dominated by rainbow trout (70%), followed by Chinook (king) and coho salmon (15%) with the remaining 14% accounted for by Arctic char, lake trout and Arctic grayling. Harvest percentages are similar to catch with rainbow trout comprising about 75% of the stocked waters total harvest, followed by Chinook (king) and coho salmon (15%), and Arctic grayling, Arctic char and lake trout combined for the remaining 10%. These catch, effort and harvest patterns have remained relatively constant over the last 10-year period.

The Upper Copper/Upper Susitna Management Area (Glennallen), although having a relatively large number of stocked fisheries, has the lowest average annual effort expended. The recent 5-year average (2003–2007) effort has been about 3,400 angler days with an average catch of 7,600 fish and harvest of 2,500 fish of all species. Similar to the other management areas, rainbow trout account for 68% of the total catch, followed by Arctic grayling (28%), Arctic char (3%) and coho salmon (1%). Rainbow trout also account for the majority of the harvest with 73%, followed by Arctic grayling (19%), Arctic char (7%) and coho salmon (1%). The largest stocked fishery within this area is Silver Lake, which accounts for 24% of the effort and 30% of harvest for all stocked waters within the area (Somerville 2008). Most of the stocked fisheries within this area are supported by the stocking of fingerlings, as these water bodies are not subject to conditions that winterkill fish as are some within Interior Alaska.

Over the last 5 years (2003–2007) there have been about 840,000 fish stocked annually into regional waters. Seventy-one percent of these stockings were rainbow trout, 18% Chinook (king) and coho salmon combined, 6% Arctic char, and 5% Arctic grayling. The lake trout stocking program was discontinued after 2001, but lake trout are planned to be part of the stocking program once the new hatcheries are completed. Recently, most of the rainbow trout have been stocked as fingerlings (70% from 2003–2007) with the remainder being catchable and sub-catchable fish. Salmon were also primarily stocked as fingerlings (81% from 2003–2007) with catchable fish representing 19%.

The stocking of hatchery fish into Region III waters in most cases mirrors the harvest statistics by species and also by area. From 2003 to 2007, the Upper Tanana Management Area has received about 55% of all hatchery fish produced for Region III, followed by the Lower Tanana Management Area at 37% and the Upper Copper/Upper Susitna Management Area at 8%.

ECONOMIC VALUE AND STOCKING COSTS

The economic value of sport fisheries to local or regional communities is not data that is routinely collected or contracted for by the department. The surveys that have been conducted have focused on specific fisheries that target salmon or pike or stocked waters. During 2004 an economic survey was conducted which focused on the stocked waters program in Region II and Region III (CH2MHILL 2004). The results of this survey suggest that for the four major stocked fisheries within the Lower Tanana Management Area (Birch Lake, Harding Lake, Chena Lake, and Piledriver Slough); the average total annual net economic value was \$1,078,383 from 1998 to 2002. The average net economic value for the Quartz Lake fishery was also estimated at \$684,240 during the same time period. If the value of these major stocked waters fisheries is expanded to the entire program and adjusted to account for current economic conditions, the overall value of this program would likely exceed \$3,000,000 annually.

REGULATORY HISTORY

As the stocked waters program expanded during the 1980s to include additional water bodies and hatchery products, angler demand for diverse opportunities also increased. In most initial stocking situations a single species was stocked and the regional background bag limit of 10 fish applied. However, as multiple species were stocked to offer additional opportunity for both ice fishing and open water fisheries, the bag limit also expanded. The background bag limit was 10 fish per species, which in the case of several major fisheries allowed for a daily limit of 30 fish (rainbow trout, Arctic char, and salmon). It was not the intent of the department or demand from the public that resulted in these liberal bag limits, but a function of responding to demand for additional opportunity on a seasonal basis.

There have been few regulatory proposals dealing with stocked waters fisheries since 1990. In 1994 the Alaska Board of Fisheries (BOF) created large fish (1 fish 18 inches or greater) fisheries at Little Harding Lake (Lower Tanana Management Area), and at Coal Mine # 5 and Craig Lakes (Upper Tanana Management Area). During the 2001 BOF meeting the bag limit for rainbow trout was reduced at Dune Lake. The change recognized the lake as being able to produce large (>20 inch) rainbow trout while providing a remote access fishery. The Board adopted this proposal and instituted a 5 fish bag limit of which only 1 fish could be 18 inches or greater in length. During this meeting the Board also repealed the length limits for Coal Mine #5 and Craig lakes as department analyses suggested that these lakes were not capable of producing fish greater than 18 inches. Also at this meeting the Board tabled consideration of additional lakes (Bluff Cabin, Lisa, Donnelly, Rainbow, and Monte lakes) for placement into the large fish (1 fish 18 inches or greater) management category. The BOF instructed the department at the next meeting (2004) to make recommendations relative to candidates for this Special Management category. In response to the BOF instructions, the department submitted the Arctic-Yukon-Kuskokwim Region Stocked Waters Management Plan and the Upper Copper River and Upper Susitna River Area Stocked Waters Management Plan for consideration at the 2004 meeting. The BOF adopted these plans which categorized Dune Lake under Conservative Management, and 6 lakes (Little Harding, Harding, Summit, Monte, Donnelly, and Rainbow lakes) under Special Management. The remaining stocked waters in the region were categorized under Regional Management. The Stocked Waters Management Plans as found in regulation is in Appendix A.

Since adoption of the Stocked Waters Management Plan only one change has been made to the stocked waters. At the 2007 AYK meeting, the BOF adopted a proposal that moved Koole Lake from Regional to Conservative Management. The description of the Stocked Waters Management Plan categories and their management approaches, and the process for moving a lake from one category to another is described below.

STOCKED WATERS CATEGORIES

The stocked waters of Region III are separated into three categories. These include Regional Management, Conservative Management, and Special Management. Each category includes water body characteristics and regulations that should allow the water bodies assigned to the category to meet the fishery objective. The specific criteria for each category are found in Appendix B.

REGIONAL MANAGEMENT WATERS

Description: These lakes and water bodies have been identified as areas where anglers generally harvest a large portion of their catch. There are currently 127 water bodies (94%) within the Region III that are categorized within this grouping. The basis for this skewed opportunity can be found in angler demand for lakes that provide a wide breadth of fishing experiences (season-open all year; varying levels of participation and quality of experience) with a liberal bag limit and minimal restrictions. This opportunity includes a wide spectrum of access options from developed roadways to more remote, limited access routes (winter trails, ATV, or fly-in).

Fishery Management Objective: To create and maintain a fishery that provides for a reasonable expectation of catching the daily bag limit within a day's angling.

Bag Limit: 10 fish (all species combined)

Length Limit: Only 1 fish, (any species) greater than 18".

Gear Restrictions: None

Season: Open all year unless specified.

CONSERVATIVE MANAGEMENT WATERS

Description: These are lakes that, owing to unique location, productivity, or angler preference, will be managed for a high catch rate and low harvest to catch ratio. The intent of this management strategy is to allow for a greater proportion of the catch to be fish of larger size. Input from local sport fishing organizations and recent BOF proposals indicate demand for this type of opportunity. This category is heavily influenced by stocking logistical limitations with emphasis towards maintaining high catch rates with the stocking of fingerlings. There are two lakes (2%) presently in this category, Dune Lake, which has been under these regulations since 2001 and Koole Lake, which was added to this category in 2007.

Fishery Management Objective: To create and maintain the opportunity to catch and harvest the daily bag limit while providing the opportunity to catch 1 fish greater than 18" within a days angling.

Bag Limit: 5 fish (all species combined)

Length Limit: Only 1 fish (any species) 18 inches or greater. **Season**: Open year round or potentially seasonally restricted.

Gear: None or moderate restrictions.

SPECIAL MANAGEMENT WATERS

Description: These are lakes that, owing to particular access, productivity, or unique fishery characteristics are deemed by the public as deserving special management. Presently there are six (4%) lakes that fit into this category. These are lakes that have proven the ability to produce large fish with generally lower overall catch and harvest rates. There is a relatively low expectation of harvesting a fish within a days angling.

Fishery Management Objective: To create and maintain a high probability of catching several large fish within a days angling for an experienced angler.

Bag Limit: 1 fish, any species, or another appropriate bag and size limit or potentially catch and release.

Season: Seasonal restrictions possible.

Gear: Open to public input, no bait, and single-hook artificial or artificial fly only.

STOCKED WATERS CLASSIFICATION

When a water body is first stocked it will be placed under the Regional Management category. Any stocked waters candidate water body must meet the standards in the Statewide Stocking Policy (Appendix D). This policy requires that public access exist for any water body that is stocked. It also provides guidelines for selecting species for stocking based on disease and genetic concerns for certain areas of the state and the likelihood of stocked fish mixing with wild fish populations.

MOVING STOCKED WATERS BETWEEN CATEGORIES

Requests to move water bodies to another category can originate with the public, local Fish and Game advisory committees, the Board of Fish, or the department. This process is driven by the public's desire to change the management goals for a water body. Generally, the characteristics of the water body combined with the public's expectation will determine the management category. Factors to consider are the water bodies' size, physical and chemical properties, productivity, presence of other species, and access. These factors will determine the likelihood of developing a successful fishery.

The department and the public must consider what characteristics and resources are required for a successful fishery under the desired management category. Some questions to consider are:

- 1. What is the public's and the department's recommendation for management category;
- 2. Can the water body meet the criteria for the proposed management category;
- 3. What is the impact to other fisheries if the hatchery must modify fish production or fish must be moved from other fisheries:
- 4. What is the need for access improvements such as road, boat launch, and parking facilities; and,
- 5. What evaluation is required to monitor the fishery?

The process of changing management category must consider all the water body characteristics listed above along with the existing constituency that may support the fishery under the current management category.

A shift from a Regional to Conservative Management will be a result of an assessment of the fishery and recognition that adjustments must be made even if hatchery product availability and performance is up to standard, or a result of changes in availability of hatchery products likely to impact the performance. If the shift is a result of fishery assessment, or deliberate changes in ADF&G strategy (such as a planned change of hatchery products), such a shift will be considered to be part of the long-term strategy and all efforts will be directed toward enhancing the benefits of the new situation. If the shift is a result of hatchery failures or other such

circumstances, the shift in status will be considered temporary until hatchery production is restored and opportunity can return to pre-planned levels.

A shift from Regional or Conservative to Special Management will be a result of public preference, special circumstances, or observed stocking results. The ability of the candidate lake to produce large (trophy) fish under current and future fishing effort must be considered. In general, lakes that have high levels of effort and are near urban centers are not well suited for Special Management consideration. All shifts in management category will be completed through submission of a proposal to the Board of Fisheries during the appropriate meeting cycle regardless of the originator.

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APPENDIX A. UPPER COPPER RIVER AND UPPER SUSITNA RIVER AREA AND ARCTIC-YUKON-KUSKOKWIM REGION STOCKED WATERS MANAGEMENT PLANS AS OF DECEMBER 2008

5 AAC 52.065. Upper Copper River and Upper Susitna River Area Stocked Waters Management Plan

- (a) The department shall manage stocked waters in the Upper Copper River and Upper Susitna River Area in order to meet public demand for diverse fishing opportunities. The department may manage fisheries to provide or maintain qualities that are desired by sport anglers. The department shall manage the stocked waters according to one of three management approaches. The management approaches are the
 - (1) regional management approach;
 - (2) conservative management approach; and
 - (3) special management approach.
- (b) The board's regulations that govern stocked waters in the Upper Copper River and Upper Susitna River Area shall be consistent with the applicable management approach specified in (a) of this section.
- (c) When a water body in the Upper Copper River and Upper Susitna River Area is first stocked, it shall be placed under the regional management approach category. After receiving a proposal from the public, the department, or from the board to reclassify a water body, and when the proposal meets the criteria for a different classification, the board may reclassify the water body. The board may act on a proposal to reclassify a water body or to designate a water body for special management only if the proposal has been submitted according to the procedures set out in 5 AAC 96.610 and is consistent with the board's regular meeting cycle schedule.
- (d) Regional management approach. Under the regional management approach, stocked waters will be managed so that there will be a reasonable expectation of high catch rates and harvesting a daily bag limit. The bag and possession limit is 10 fish in combination of all stocked species, and only one of those fish may be 18 inches or greater in length. The fishing season is open year round and bait may be used.
- (e) Conservative management approach. Under the conservative management approach, stocked waters will be managed so that there will be a reasonable expectation to catch a daily bag limit with a reasonable chance of catching fish 18 inches or greater in length. The bag and possession limit is five fish in combination of all stocked species, and only one of those fish may be 18 inches or greater in length. The fishing season is open year round and bait may be used.
- (f) Special management approach. Under the special management approach, stocked waters will

be managed so that there will be a high probability of an angler catching more than one fish a day that is 18 inches or greater in length. When considering a proposal regarding this management approach, the board should consider taking the following actions:

- (1) limit fishing to
 - (A) catch-and-release fishing;
 - (B) fly fishing;
 - (C) trophy fishing, which means that a fish retained must be 18 inches or greater in length;
- (2) establish seasonal periods when fishing is closed or is restricted to catch-and-release fishing; or
- (3) establish a bag limit of one fish, 18 inches or greater in length, or another appropriate bag and size limit.
- (g) During times of low hatchery output, the commissioner may, by emergency order, modify methods and means, reduce bag limits, or institute a catch-and-release only fishery.

History: Eff. 5/19/2004, Register 170; am 9/12/2008, Register 187

Authority: AS 16.05.251

5 AAC 70.065. Arctic-Yukon-Kuskokwim Region Stocked Waters Management Plan

- (a) The department shall manage stocked waters in the Arctic-Yukon-Kuskokwim Region in order to meet public demand for diverse fishing opportunities. The department may manage fisheries to provide or maintain qualities that are desired by sport anglers. The department shall manage the stocked waters according to one of three management approaches. The management approaches are the
 - (1) regional management approach;
 - (2) conservative management approach; and
 - (3) special management approach.

- (b) The board's regulations that govern stocked waters in the Arctic-Yukon-Kuskokwim Region shall be consistent with the applicable management approach specified in (a) of this section.
- (c) When a water body in the Arctic-Yukon-Kuskokwim Region is first stocked, it shall be placed under the regional management approach category. After receiving a proposal from the public, the department, or from the board to reclassify a water body, and when the proposal meets the criteria for a different classification, the board may reclassify the water body. The board may act on a proposal to reclassify a water body or to designate a water body for special management only if the proposal has been submitted according to the procedures set out in 5 AAC 96.610 and is consistent with the board's regular meeting cycle schedule.
- (d) Regional management approach. Under the regional management approach, stocked waters will be managed so that there will be a reasonable expectation of high catch rates and harvesting a daily bag limit. The bag and possession limit is 10 fish in combination of all stocked species, and only one of those fish may be 18 inches or greater in length. The fishing season is open year round and bait may be used.
- (e) Conservative management approach. Under the conservative management approach, stocked waters will be managed so that there will be a reasonable expectation to catch a daily bag limit with a reasonable chance of catching fish 18 inches or greater in length. The bag and possession limit is five fish in combination of all stocked species, and only one of those fish may be 18 inches or greater in length. The fishing season is open year round and bait may be used.
- (f) Special management approach. Under the special management approach, stocked waters will be managed so that there will be a high probability of an angler catching more than one fish a day that is 18 inches or greater in length. When considering a proposal regarding this management approach, the board should consider taking the following actions:
 - (1) limit fishing to
 - (A) catch-and-release fishing;
 - (B) fly fishing;
 - (C) trophy fishing, which means that a fish retained must be 18 inches or greater in length;
 - (2) establish seasonal periods when fishing is closed or is restricted to catch-and-release fishing; or

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- (3) establish a bag limit of one fish, 18 inches or greater in length, or another appropriate bag and size limit
- (g) Water bodies managed under the special management approach include
 - (1) Little Harding Lake;
 - (2) Harding Lake;
 - (3) Summit Lake;
 - (4) Monte Lake;
 - (5) Donnelly Lake; and
 - (6) Rainbow Lake.
- (h) Water bodies managed under the conservative management approach include
 - (1) Dune Lake; and
 - (2) Koole Lake.
- (i) During times of low hatchery output, the commissioner may, by emergency order, modify methods and means, reduce bag limits, or institute a catch-and-release only fishery.

History: Eff. 5/19/2004, Register 170; am 6/21/2007, Register 182; am 9/12/2008, Register 187

Authority: AS 16.05.251

APPENDIX B. CRITERIA FOR MANAGEMENT CATEGORIES IN THE REGION III STOCKED WATERS MANAGEMENT PLAN

Regional Management Waters

- a. Expectation of a reasonable sustained fishing opportunity (diversity and catch rate) with:
 - (1) 10 fish aggregate bag limit (allows liberal harvest); and,
 - (2) Size limit 1 fish 18" or greater of any species recognizes value of any large fish that may be present and spreads opportunity to harvest among more anglers.
- b. Access commensurate with size of lake and setting; allow a relatively high effort per acre of water and access for fish stocking and evaluation work.
 - (1) Hatchery truck will have direct access to water.
 - (2) Level of public access may vary with the size of the water body and resources expended to provide fishery, and ownership of land bordering water.
- c. Expectation of fishery performance achieving broad objectives of stocking program.
- d. Likely to be sustained by catchables, and any combination of available resources (multiple species, access improvements, multi-agency efforts, multiple stockings each year).
- e. May be prone to winterkill or be predator-infested; justified if sufficient effort exists.
- f. Waters may be Urban, Rural, or Remote.

Conservative Management Waters

- a. Category strongly driven by stocking access limitations.
- b. Expectation of a reasonable sustained fishing opportunity (diversity and catch rate) with:
 - (1) 5 fish aggregate bag limit; and,
 - (2) Size limit 1 fish 18" or greater of any species recognizes value of any large fish that may be present and spreads opportunity to harvest them among more anglers.
- c. Access commensurate with size and setting; allow a relatively high effort per acre of water and access for stocking/evaluation.
- d. Expectation of performance of the fishery meeting:
 - (1) Broad objectives of stocking program at a somewhat reduced harvest level from Regional Management waters; and,
 - (2) Possibly some site-specific objectives.

- e. High likelihood of maintenance of fishery by fingerling stockings. Much less likely to be sustained by catchables. Logistics and time of availability of suitable sized fish often drive stocking approach.
 - (1) Unlikely to winterkill or have predator species such as northern pike.
 - (2) Increased likelihood of management for single species.
 - (3) Likely, but not necessarily rural or remote location.

Special Management Waters

- a. Management strategy tailored to the specific water and focused to meet specific objectives such as defined population structure, catch rate, and diversity of fishing opportunity.
 - (1) Diversity objective met by provision of an opportunity highly valued by anglers that is not widely available.
 - (2) Any appropriate hatchery resources may be utilized.
- b. Regulations tailored to specific water and management strategy, likely very conservative.
- c. Effort and catch not necessarily a standard for success. Success will be measure by a combination of angler satisfaction, appropriate access, demonstrated opportunity, and achievement of population structure goals and evidence of use.
- d. Consideration of wild stock management when present.
- e. Can be Urban, Rural, or Remote lakes.

APPENDIX C. REGION III STOCKED LAKES BY MANAGEMENT AREA, MANAGEMENT CATEGORY, AND FISHERY CATEGORY AS OF DECEMBER 2008

Appendix C1.-Upper Tanana River Management Area Stocked Waters.

Regional Mo	anagement				
Sub Categor		Lake	Acres	Species Stocked	Lifestage
Large	Richardson Hwy	Quartz L	1,500	Arctic Char	Fingerling Subcatchable Catchable Broodstock
				Chinook Salmon Coho Salmon Grayling	Catchable Fingerling Fingerling Catchable
				Rainbow Trout	Fingerling Subcatchable Catchable Broodstock
Urban	Delta	Big "D" Pond	20	Arctic Char	Subcatchable Catchable
				Grayling	Catchable
				Rainbow Trout	Subcatchable Catchable
Rural	Alaska Hwy	Craig L	17	Lake Trout Rainbow Trout	Subcatchable Fingerling
		Four Mile L	100	Arctic Char	Fingerling Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
			20	Rainbow Trout	Fingerling Subcatchable
		Hidden L (Tok)	20	Rainbow Trout	Fingerling Subcatchable
		Jan L	45	Coho Salmon Grayling	Fingerling Fingerling Catchable
				Rainbow Trout	Fingerling Subcatchable
		Lisa L	50	Arctic Char	Fingerling Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling Subcatchable
		Robertson L #2	15	Arctic Char	Fingerling
				Coho Salmon	Fingerling
				Grayling Rainbow Trout	Fingerling Fingerling Subcatchable
	Coal Mine Road	Backdown L	6	Arctic Char	Fingerling Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable

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Sub Category	agement Continued Location	Lake	Acres	Species Stocked	Lifestage
Rural	Coal Mine Road	Brodie L	5	Arctic Char	Fingerling Subcatchable
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				• 6	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
		Coal Mine #5	13	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Lake Trout	Subcatchable
				Rainbow Trout	Fingerling
					Subcatchable
		Dicks Pond	5	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Kens Pond	5	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Last L	5	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
			5	Rainbow Trout	Catchable
		Paul's Pond	5	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
			_		Subcatchable
		Rangeview L	5	Arctic Char	Fingerling
				a	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable

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	agement Continued		A ama a	Cnasias Ctarler 1	Lifester-
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Rural	Meadows Road	Big L	64	Rainbow Trout	Catchable
		D.11. I	120	A	Fed Fry
		Bolio L	138	Arctic Char	Fingerling
					Subcatchable
				Catchable	
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Bullwinkle L	4	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Chet L	8	Arctic Char	Fingerling
					Subcatchable
					Catchable
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Grayinig	Catchable
				Rainbow Trout	Fingerling
				Kambow 110ut	Subcatchable
					Catchable
		Doc L	3	Arctic Char	Subcatchable
		DOCL	3	Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
				Kambow 110ut	Subcatchable
		Ghost L	5	Arctic Char	
		Gliost L	3	Arcuc Char	Fingerling Subcatchable
				Coho Salmon	
					Fingerling
				Grayling	Fingerling
				Lake Trout	Subcatchable
				Rainbow Trout	Fingerling
		T T	1.7	A 41 GI	Subcatchable
		JL	15	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable
		Luke L	8	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				• 0	Catchable
				Rainbow Trout	Fingerling

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Sub Category	agement Continued Location	Lake	Acres	Species Stocked	Lifestage
Rural	Meadows Road	Mark L	18	Arctic Char	Fingerling Subcatchable Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Graying	Catchable
				Rainbow Trout	Fingerling
				Tumbon 110av	Subcatchable
					Catchable
					Broodstock
		Meadows Rd #1	3	Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Meadows Rd #2	5	Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Meadows Rd #3	3	Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
		36 1 8144			Subcatchable
		Meadows Rd #4	4	Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
		Mandania D4.45	4	Caha Calman	Subcatchable
		Meadows Rd #5	4	Coho Salmon Grayling	Fingerling Fingerling
				Rainbow Trout	Fingerling Fingerling
				Kambow 11out	Subcatchable
		Meadows Rd #6	4	Coho Salmon	Fingerling
		Weddows Rd no	т	Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		N Twin L	20	Arctic Char	Fingerling
					Subcatchable
					Catchable
					Broodstock
				Chinook salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Lake Trout	Subcatchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock

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Sub Category	agement Continued. Location	 Lake	Acres	Species Stocked	Lifestage
Rural	Meadows Rd	Nickel L	5	Arctic Char	Fingerling
Kurui	Wicadows Ru	NICKCI L	3	Arcuc Chai	Subcatchable
					Catchable
				Chinook salmon	Catchable
				Coho salmon	Fingerling
				Grayling	Fingerling
				T 1 7D 4	Catchable
				Lake Trout	Subcatchable
				Rainbow Trout	Fingerling
					Subcatchable
		N N T			Catchable
		No Mercy L	3	Arctic Char	Fingerling
				~ . ~ .	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		Rockhound L	3	Arctic Char	Fingerling
				~ . ~ .	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		S Twin L	20	Arctic Char	Fingerling
					Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock
		Sheefish L	8	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				, <u>-</u>	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
		West Pond	8	Rainbow Trout	Fed Fry
		-	-		Catchable
	Richardson Hwy	Little Lost L	95	Grayling	Catchable
		—		Rainbow Trout	Catchable
					Broodstock
		Rapids L	5	Arctic Char	Fingerling
			-		Subcatchable
					Catchable
				Coho Salmon	Fingerling
					Fingerling
			ntinuad	Grayling	i ingerinig

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Regional Man	Regional Management Continued						
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage		
Rural	Richardson Hwy	Rapids L	5	Rainbow Trout	Fingerling		
		(continued)			Subcatchable		
					Catchable		
		Rich 81	3	Arctic Char	Catchable		
					Broodstock		
				Chinook Salmon	Catchable		
				Grayling	Catchable		
				Rainbow Trout	Catchable		
					Broodstock		
		Shaw Pond	3	Arctic Char	Catchable		
					Subcatchable		
					Broodstock		
				Chinook Salmon	Catchable		
				Coho Salmon	Fingerling		
				Grayling	Catchable		
				Rainbow Trout	Catchable		
					Subcatchable		
					Broodstock		
		Weasel L	8	Arctic Char	Fingerling		
					Subcatchable		
				Coho Salmon	Fingerling		
				Grayling	Fingerling		
				Rainbow Trout	Fingerling		
					Subcatchable		
Remote	Alaska Hwy	Donna L	58	Arctic Char	Fingerling		
					Subcatchable		
				Coho Salmon	Fingerling		
				Grayling	Fingerling		
				Rainbow Trout	Fingerling		
					Subcatchable		
		Forest L	36	Arctic Char	Fingerling		
					Subcatchable		
				Coho Salmon	Fingerling		
				Grayling	Fingerling		
				Rainbow Trout	Fingerling		
					Subcatchable		
		Little Donna L	30	Arctic Char	Fingerling		
					Subcatchable		
				Coho Salmon	Fingerling		
				Grayling	Fingerling		
				Rainbow Trout	Fingerling		
					Subcatchable		
		S Johnson L	14	Arctic Char	Fingerling		
					Subcatchable		
				Coho Salmon	Fingerling		
				Grayling	Fingerling		
				Rainbow Trout	Fingerling		
					Subcatchable		

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	agement Continued				
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Remote	Denali Hwy	Fourteen Mile L	90	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
	Richardson Hwy	Bluff Cabin L	72	Arctic Char	Fingerling
	•			Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
		Crystal L	75	Lake Trout	Subcatchable
		Kenna L	45	Arctic Char	Fingerling
		Kennu L	15	Coho Salmon	Fingerling
				Grayling	Fingerling
				Lake Trout	Subcatchable
				Rainbow Trout	Fingerling
				Kambow Hout	ringerinig
Conservative 1	Management				
Remote	Richardson Hwy	Koole L	320	Arctic Char	Fingerling
	•				Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
Special Mana	gement				
Rural	Richardson Hwy	Donnelly L	30	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
.	A.1. 1. TT	3.6 · T	0.0	A C1	F2' 1'
Remote	Alaska Hwy	Monte L	90	Arctic Char	Fingerling
				a. a.	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
			90	Rainbow Trout	Fingerling
					Subcatchable
	Delta	Rainbow L	96	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable

Note: Bold items indicate species and stocked and lifestage stocked in 2008, other species and lifestage listed are those that may be stocked in future years.

Appendix C2.–Lower Tanana River Management Area Stocked Waters.

Regional Man					
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Large	North Pole	Chena L	259	Arctic Char	Fingerling
					Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				, ,	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock
	Richardson Hwy	Birch L	808	Arctic Char	Fingerling
	reichardson 11w y	Direit L	000	Arctic Chai	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
					Subcatchable
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock
		Piledriver Sl	ND	Arctic Char	Catchable
				Rainbow Trout	Catchable
					Broodstock ^a
771	E'alaaa AED	Desail	40	A madia Ciliana	C-4-1-1-1-
Urban	Eielson AFB	Bear L	48	Arctic Char	Catchable
				C1: 1 C 1	Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Grayling L	22	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Hidden Lake	18	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
					21000000n

Appendix C2.–Page 2 of 7.

	agement Continue			G ' G, 1 1	T'C
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
U rban	Eielson AFB	Horseshoe L	21	Arctic Char	Fingerling
					Subcatchable
					Catchable
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				v o	Catchable
				Rainbow Trout	Fingerling
				Tumbow 11out	Subcatchable
					Catchable
		Manchu L	43	Arctic Char	Subcatchable
		Manchu L	43	Arcuc Chai	
					Catchable
				G1: 1 G 1	Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock ^a
		Moose L	32	Arctic Char	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Subcatchable
				Kambow 110ut	Catchable
					Broodstock
		Mailing Dia	80	A4' Cl	
		Mullins Pit	80	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Polaris L	44	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
	Fairbanks	Ballaine L	2	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
				Namouw 110ut	
		IZ: 12 IZ: 1.1 D 1	1	A	Broodstock
		Kid's Fishing Pond	1	Arctic Char	Catchable ^a
				~ "	Broodstock
				Grayling	Catchable ^b
				Rainbow Trout	Catchable ^b
					Broodstock ^b

Appendix C2.–Page 3 of 7.

	nagement Continued.			9 1 9 1 1	T 10
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Urban	Fort Wainwright	Montery Lake	5	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Wainwright #6	3	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
	Nenana	Nenana City Pond	9	Arctic Char	Fingerling
		·			Subcatchable
					Catchable
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Fingerling
					Catchable
					Broodstock
	North Pole	Bathing Beauty	7	Arctic Char	Fingerling
	11014111010	Builing Beauty	,	THE CHUI	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
			7	Grayling	Fingerling
			/	Grayinig	Catchable
				Doink and Tuent	
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		IZ!11. I	7	D - ! - !	Broodstock
		Kimberly L	7	Rainbow Trout	Catchable
		Lundgren Pond	3	Arctic Char	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Subcatchable
					Catchable
					Broodstock
		North Chena Pond	5	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		North Pole Pond	14	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		-continu			Droodstock

Appendix C2.–Page 4 of 7.

	nagement Continued				
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Urban		Sirlin Dr Pond	2	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Z Pit	ND	Grayling	Catchable
Rural	Chena Hot Springs Rd	Chena HS #25.0	6	Arctic Char	Catchable
	1 8				Broodstock
				Chinook Salmon	Catchable
				Grayling	Fingerling
				Grajinig	Catchable
				Rainbow Trout	Catchable
				Kambow 110ut	Broodstock
		Chena HS E 30.0		Arctic Char	Catchable
		Cheha HS E 30.0		Arctic Chai	Broodstock
				Chi 1 . C . 1	
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		~ ~~		Arctic Char	Catchable
		Chena HS #45.5	10	Arctic Char	Subcatchable
					Catchable
				Grayling	Fingerling
					Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Chena HS #47.9	6	Arctic Char	Subcatchable
					Catchable
				Grayling	Fingerling
				, ,	Catchable
				Rainbow Trout	Fingerling
				11000	Subcatchable
					Catchable
	Elliot Hwy	Olnes Pond	5	Arctic Char	Subcatchable
	Linot Hwy	Offics I offic	3	Arctic Char	Catchable
				Grayling	Catchable
				Rainbow Trout	Fingerling
				Kallibow 1 rout	
					Subcatchable
	None	I D 1	2	C1'	Catchable
	Nenana	Long Pond	3	Grayling	Catchable
		Round Pond	3	Grayling	Catchable
	North Pole	Nordale #2	1	Grayling	Catchable
				Rainbow Trout	Catchable
		Stringer Rd Pond	17	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock

	gement Continued				
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Rural	Parks Hwy	Otto L	100	Arctic Char	Fingerling
					Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Grayling	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
					Broodstock
		Parks Hwy 261	4	Arctic Char	Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
	Richardson Hwy	Johnson Pit #1	14	Arctic Char	Catchable
				~	Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
		T T	0.4	A 42 CI	Broodstock
		Lost L	94	Arctic Char	Subcatchable
				Chinash Calman	Catchable
				Chinook Salmon	Catchable Subcatchable
				Grayling	Catchable
				Rainbow Trout	Fingerling
				Kallibow 11out	Catchable
		Mosquito Creek	2	Arctic Char	Catchable
		Mosquito Cicck	2	Arctic Chai	Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
				Kambow 11out	Broodstock
		Rich 28	8	Arctic Char	Catchable
		111011 20	· ·	1110010 01101	Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock
		Rich 31	18	Arctic Char	Catchable
			-		Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Catchable
					Broodstock

Appendix C2.–Page 6 of 7.

	gement Continued.	••			
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Rural	Steese Hwy	Steese Hwy 29.5	9	Arctic Char	Catchable
				Grayling	Catchable
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Steese Hwy 31.6	4	Arctic Char	Catchable
				Grayling	Catchable
					Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Steese Hwy 33.5	3	Arctic Char	Catchable
				Grayling	Catchable
					Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Steese Hwy 34.6	6	Arctic Char	Catchable
				Grayling	Catchable
					Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
					Catchable
		Steese Hwy 35.8	3	Arctic Char	Catchable
				Grayling	Catchable
					Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
		G. 17 05.5	•		Catchable
		Steese Hwy 36.6	9	Arctic Char	Catchable
				Grayling	Catchable
				D 1	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
D	NT	Garlalania I	255	A	Catchable
Remote	Nenana	Geskakmina L	255	Arctic Char	Fingerling
				Coho Salmon	Subcatchable
					Fingerling
				Grayling Rainbow Trout	Fingerling
				Kambow 1 rout	Fingerling Subcatchable
		Triangle	106	Arctic Char	Fingerling
		Thangle	100	Alctic Chai	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling Fingerling
				Rainbow Trout	
				Namoow 1 rout	Fingerling Subcatchable
		West Iksgiza (Gap	81	Arctic Char	Fingerling
		west iksgiza (Gap	01	Arcue Char	Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling Fingerling
				Nambuw 170ul	Subcatchable
			1		Subcatchable

Appendix C2.–Page 7 of 7.

Regional Manag	gement Continued				
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Conservative Me	3				
Remote	Nenana	Dune L	179	Arctic Char	Fingerling
					Subcatchable
				Coho Salmon	Fingerling
				Grayling	Fingerling
				Rainbow Trout	Fingerling
					Subcatchable
Special Manage	ement				
Large	Richardson Hwy	Harding L	2,470	Arctic Char	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Lake Trout	Subcatchable
				Rainbow Trout	Subcatchable
					Catchable
					Broodstock
Rural	Parks Hwy	Summit L	400	Arctic Char	Subcatchable
					Catchable
				Chinook Salmon	Catchable
				Grayling	Catchable
				Lake Trout	Subcatchable
				Rainbow Trout	Catchable
	Richardson Hwy	Little Harding L	54	Arctic Char	Subcatchable
					Catchable
					Broodstock
				Chinook Salmon	Catchable
				Grayling	Catchable
				Rainbow Trout	Subcatchable
					Catchable
					Broodstock

a All female Broodstock only.b Fish are transferred to North Pole Pond after the derby.

Appendix C3–Upper Copper / Upper Susitna Management Area Stocked Waters.

Regional Mai	nagement				
Sub Category	Location	Lake	Acres	Species Stocked	Lifestage
Large	McCarthy Rd	Silver L	500	Rainbow Trout	Fingerling
					Subcatchable
Rural	Chitina	Three Mile L	20	Rainbow Trout	Fingerling
		Town Lake	33	Rainbow Trout	Fingerling
		Two Mile L	17	Rainbow Trout	Fingerling
	Glenn Hwy	Arizona	25	Grayling	_a
	•	Buffalo L	4	Rainbow Trout	Fingerling
		DJ L	4	Rainbow Trout	Fingerling
		Gergie L	60	Rainbow Trout	Fingerling
		Little Junction L	5	Grayling	_a
		Ryan L	45	Rainbow Trout	- Catchable
		Tex Smith L	15	Rainbow Trout	Fingerling
	Lake Louise Rd	Connor L	18	Grayling	9
	Lake Louise Ku	Crater L	16	Rainbow Trout	_a Fingerling
		Junction L	18	Grayling	_a
		Little Crater L	2	Rainbow Trout	_u Fingerling
		Old Road L	2	Rainbow Trout	Fingerling
		Peanut L	12	Rainbow Trout	Fingerling
		Round L	2	Rainbow Trout	Fingerling
		Round L	2	Rambow Hout	Tingering
	McCarthy Rd	Sculpin L	190	Rainbow Trout	Fingerling
		Strelna L	290	Coho Salmon	Fingerling
				Rainbow Trout	Fingerling
		Van L	260	Rainbow Trout	Fingerling
	Richardson				
	Hwy	Dick L	40	Arctic Char	Subcatchable
		Pippin L	160	Rainbow Trout	Fingerling
		Squirrel Ck Pit	5	Rainbow Trout	Catchable
Remote	Glenn Hwy	John L	160	Rainbow Trout	Fingerling
	•	Tolsona Mt. L	75	Rainbow Trout	Fingerling
	Lake Louise Rd	North Jans L	58	Rainbow Trout	Fingerling
		South Jans L	100	Coho Salmon	Fingerling
					Fingerling
	Tok Cut-Off	Kathleen L	20	Rainbow Trout	Fingerling

^a Lake was not stocked in 1997, but stocking of species listed will resume in subsequent years.

APPENDIX D. LAKE STOCKING POLICY FOR SPORT FISH DIVISION AS OF APRIL 2008

Sport Fish Division adopted a lake stocking policy in 1998 (revised in 2008) that dictates how the stocked waters program operates. This policy directs how Division staff will operate relative to planning and permitting, consideration of candidate lakes and water bodies for stocking, genetic concerns relative to wild stocks and a host of other guidelines. An electronic copy of this policy can be found at: http://www.sf.adfg.state.ak.us/Statewide/hatchery/index.cfm/FA/stocking.policy.

LAKE STOCKING POLICY FOR SPORT FISH DIVISION

Original Policy Authorized in February of 1998 Revised 04/07/2008

INTRODUCTION

The stocking of lakes with hatchery reared fish was initiated in the 1950's and has become an integral component of the Alaska Department of Fish and Game (ADF&G) Sport Fish Division. Initial fish stocking included the introduction of species and stocks from the Pacific Northwest, as well as transporting Alaska stocks of fish into non-native areas with the intent to establish populations. These types of stockings were acceptable management practices at the time, but they would not be allowed today. Currently, over 300 lakes in Southeast, Southcentral and Interior Alaska are stocked with hatchery-produced fish.

Fish stocking is stringently regulated in Alaska. Title 16 of the Alaska Statutes and Title 5 of the Alaska Administrative Code specifically address the transportation and possession of live fish. Although the statutes and administrative code provide overall directives, they do not provide specific recommendations on what physical and biological characteristics define acceptable stocking locations, appropriate measures to sterilize fish, or specific recommendations for the use of species, life stages or genetic type. Fishery managers need guidelines on these variables to plan stocking projects. This policy is intended to guide the Sport Fish Division lake stocking projects that benefit recreational anglers. Regular review of this policy will be necessary to keep it germane to management philosophy and hatchery technology changes.

PLANNING

Sites for stocking fish are proposed, reviewed and approved through an ADF&G planning process. Sport Fish Division Area Management Biologists or regional stocking program personnel initiate all stocking requests for their area of responsibility. Public inquiries relative to lake stocking should be directed to these people. They will investigate the ability of the lake to sustain fish, public access opportunities, and lake characteristics. A recommendation to stock or not to stock the lake will be made based on the investigation results and appropriate lake stocking guidelines.

All Sport Fish Division lake stocking is primarily funded with Federal Aid in Sport Fish Restoration funds. Therefore, each lake stocking project must comply with rules outlined in the "Federal Aid Manual" and other criteria specified by the Division of Federal Aid, U.S. Fish and Wildlife Service (USFWS).

The primary planning document for lake stocking is the Statewide Stocking Plan for Recreational Fisheries (SSP). This document describes a five-year plan for stocking projects for recreational anglers and is updated annually. The SSP receives state, federal and public review.

A-1 -continuedAny proposed lake stocking should appear in the SSP one year or more prior to the initial stocking.

PERMITTING

Once the planning phase of a stocking project is complete, a Fish Transport Permit (FTP) must be obtained. The FTP is required as part of authorization for possession, transport, and release of live fish within the state (5 AAC 41.005). An FTP can be obtained by filling out a detailed application that contains all information pertinent to the project. Each application is reviewed by a cross-section of ADF&G personnel and submitted to the Commissioner of ADF&G with a recommendation for approval or denial.

Numerous Sport Fish Division stocked lakes may be grouped together on a single FTP. The primary groupings are organized by species, life stage and genetic type. Multiple life stages can be included on a single FTP. Secondary groupings can be organized by lake category and geographic area.

All lake stocking FTPs will be issued for a fixed period. Sport Fish Division has selected a maximum period of 5 years. All FTPs for each species are scheduled to expire simultaneously. Expiration of FTPs for a species will trigger an internal review of the stocking program for that species. The expiration dates by species are as follows:

Species	Expiration Date
Arctic char	12/31/08
Chinook salmon	12/31/09
Rainbow trout – all genetic types	12/31/10
Lake trout	12/31/10
Arctic grayling	12/31/11
Coho Salmon	12/31/12

Following review, FTPs may be issued or amended to extend the effective date for another 5-year period.

LAKE CATEGORIES

Prior to stocking, a lake must be classified into one of five categories that rank lakes according to the likelihood that fish stocked in the lakes may escape into other water bodies within the drainage. Category I lakes are single or multiple connected lakes that are landlocked from which fish cannot escape. These lakes have no outlet stream with direct or indirect access to an open system that eventually leads to saltwater. Category 2 lakes have intermittent outlets. A small stream may flow out of the lake during high water periods. The incidence of high water periods is usually less than 2 weeks per year. Fish may periodically escape and interact with wild fish populations. Category 3 lakes have barriered or weired outlets. A barriered outlet has a natural structure that prevents fish passage into or out of the lake. A weired outlet has a man-made

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structure that prevents fish passage, has passed requirements for blockage to fish passage, and is regularly inspected and certified for blockage. Birch Lake in interior Alaska and Cheney Lake in southcentral Alaska are examples of weired Category 3 lakes that meet blockage requirements. Fish may periodically escape from barriered Category 3 lakes and impact wild fish populations. The incidence of fish escape from weired Category 3 lakes is low and is not likely to impact wild fish populations. Category 4 lakes are prone to floods. These are small lakes or ponds usually located in the floodplain of a stream and subject to flooding during high water flows. Fish can leave the system during flood events. Some lakes in this category may flood every year while others rarely flood. Category 5 lakes have open outlets. Fish can pass freely in and out of the system. The potential impact to wild fish populations is high. The magnitude of impact depends on the species and life stage stocked and the wild stocks present.

STOCKING PRODUCTS

Five species are currently reared for stocking projects (Table 1). We produce fish that are reproductively viable (diploid, mix-sex) and reproductively impaired. Two methods are used to produce fish that are unlikely to result in self-reproducing populations or in hybridization with local stocks: triploidy and all-female induction. Triploids have been produced for all species except lake trout. Triploid induction success rate varies by species with high induction rates for Arctic grayling, landlocked salmon, and Arctic char, and lower rates for rainbow trout. To further insure the non-reproductive status of triploid rainbow trout, all-female lots are produced. Triploids are sterile while all-females are incapable of establishing self-reproducing populations in the absence of wild fish.

The Departments threshold for mixed-sex triploids is being 95% confident that the triploid rate is 99% or higher. The certification rate for all-female triploid rainbow trout is being 95% confident that the triploid rate is 90% or higher. Fish certified at a lower rate can only be stocked into lakes approved for stocking of diploid stocking products.

In order to reduce the potential for negative impacts to wild fish populations, the Sport Fish Division is endorsing the use of sterile stocking products whenever practical.

Rainbow trout

Rainbow trout are the primary hatchery product used in lake stocking. All rainbow trout production comes from captive broodstock maintained at Fort Richardson Hatchery. The broodstock is descended from wild Swanson River rainbow trout collected in the 1980s.

Numerous sizes of rainbow trout are stocked. Excess broodstock at Ft. Richardson Hatchery are periodically culled for stocking. Rainbow trout broodstock are 1 to 3 years old and usually weigh 0.2 to 1.0 kg (1/2 to 2.2 pounds). Catchable rainbow trout are 1-2 years old and weigh an average of 100 g (1/4 pound). Subcatchable rainbow trout are 6 months to 1 year old and weigh between 15 and 60 g. Fingerling rainbow trout are usually 2 to 4 months old and weigh between 1 and 4 g. Rainbow trout fry are less than 2 months old and usually weight less than a gram.

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Arctic Grayling

Arctic grayling are stocked in many Southcentral and Interior Alaska lakes. A few lakes in Southeast Alaska have been stocked intermittently. All hatchery produced Arctic grayling are reared from eggs obtained from wild fish from the Chena River stock. No captive broodstock is maintained in the hatchery. Fingerling Arctic grayling are usually 2 to 4 months old and weigh between 1 and 4 g. Arctic grayling fry are less than 2 months old and usually weigh less than a gram. Arctic grayling sac-fry are newly hatched and weigh less than 0.1 g. The Arctic grayling catchable program was suspended after stocking in 2003, however, the catchable program may be reinitiated with the completion of new hatchery facilities expected in 2010.

Arctic Char

Arctic char are stocked in Interior and Southcentral Alaska lakes. Hatchery Arctic char are produced from eggs taken from a captive broodstock maintained at Fort Richardson Hatchery that descended from fish captured in Bristol Bay (Lake Aleknagik). Numerous sizes of Arctic char are stocked. Catchable Arctic char are $1\frac{1}{2}$ years old and weigh an average of 120 g. Subcatchable Arctic char are 6 months old and weigh between 15 and 60 g. Fingerling Arctic char are usually 4 to 6 months old and weigh between 5 and 10 g.

Lake Trout

The lake trout stocking program has been dormant since the 2001 stocking season. Lake trout were stocked in a few Interior and Southcentral Alaska lakes. All hatchery lake trout were from eggs taken from a wild fish stocks. The broodstock used was from Seven-mile Lake (Yukon River drainage) near Paxson. No captive broodstock was maintained in the hatchery. Due to the difficulty of conducting a wild egg take and the longevity of this species, eggs were only taken every other year. Two sizes of lake trout were stocked. Catchable lake trout were $1\frac{1}{2}$ years old and weighed an average of 100g. Fingerling lake trout were usually 4 to 6 months old and weighed between 5 and 10g. The lake trout program may be reinitiated with the completion of construction of new hatchery facilities expected by 2010.

Coho Salmon

Coho salmon are stocked in many Interior and Southcentral Alaska lakes. Sport Fish Division use of coho salmon to stock lakes in Southeast Alaska has been limited. Currently all hatchery-produced coho salmon used for lake stocking are from eggs taken from hatchery-produced adults. Broodstock used may vary depending on availability and may change with completion of new hatchery facilities expected by 2010. Two sizes of coho salmon have been stocked. Fingerling coho salmon are 2 to 4 months old and weigh between 1 and 5g. Subcatchable coho salmon are 1 year old and weigh an average of 23g.

Chinook Salmon

Chinook salmon are stocked in many Interior and Southcentral Alaska lakes and a few Southeast Alaska lakes. Currently, all hatchery-produced Chinook salmon used for lake stocking are from eggs taken from hatchery-produced adults. Broodstock used may vary depending on availability and may change with completion of new hatchery facilities expected by 2010. Two sizes of Chinook salmon have been stocked. Catchable Chinook salmon are 1 year old and weigh an

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average of 100 g. Subcatchable Chinook salmon are 6 to 8 months old and weigh an average of 20 g.

GENETIC AND DISEASE CONCERNS

The release of fish from hatcheries to lakes is governed by two complex policies. The genetic policy (Genetic Policy, Alaska Department of Fish and Game, 1985) was developed to protect the genetic integrity of wild and hatchery stocks. The disease policy (Regulation Changes, Policies and Guidelines for Alaska Fish and Shellfish Health and Disease Control, Alaska Department of Fish and Game, 2003) was developed to prevent the spread of fish diseases to wild and hatchery fish stocks. One area of concern for all categories is the illegal removal and transport of live fish out of stocked lakes for release into other water bodies. To reduce the potential for spreading disease via stocking or illegal fish transfers, hatchery fish are evaluated and approved for release by the pathology section before stocking. The use of pre-release disease evaluations and certified triploids will significantly reduce genetic and disease risks, respectively from illegal fish transfers.

The degree of genetic and pathology concern depends on the species and product (ploidy and sex) of fish stocked and the category of lake. There are minimal genetic or disease concerns with the stocking of any species of fish into a category 1 (landlocked) lake. The fish cannot escape the lake and cause problems with wild fish populations. In addition, there is no outlet to transport water borne pathogens. The primary concern in category 1 lakes is the illegal transport and release by the public to nearby bodies of water.

There are both genetic and disease concerns with stocking fish into category 2 (intermittent outlet), category 3 (certified weired or barriered outlet), and category 4 (flood prone) lakes. Whenever stocked fish escape the lake of origin it is possible that genetic interaction, species range extension or the spread of pathogens could occur. Stockings should be considered for each instance based on episodic floods, certification of the weir structure or barrier along with the species stocked, habitat suitability, and the wild species present as all these factors influence the potential for problems.

Fish stocked in Category 5 (open outlet) lake/stream systems can enter and leave most systems at will, which increases the possibility for genetic interaction, spreading disease, and expanding species range. Stocking fish in lakes with open outlets is generally not acceptable from either a genetics or disease perspective. However, select circumstances exist at some lakes that may ameliorate genetic and disease concerns. This may include barren systems or open systems stocked with sterile fish not expected to compete with or prey upon resident fish.

MANAGEMENT CONCERNS

Management concerns associated with stocked lakes are minimal. No commercial fisheries are involved and there are no conservation concerns with stocked fish. Sport anglers are likely the sole harvesters of fish from the Sport Fish Division lake stocking program, however, subsistence fisheries could develop at some lakes. If this occurs, stocking activity should be evaluated to assure adequate benefit is being derived by sport anglers to justify continued stocking. Some lake stocking projects may require a change in area sport fishing regulations. Most area regulations are conservative to preserve wild stocks of resident fish. Regulations on stocked

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lakes are generally more liberal. Sport anglers are encouraged to harvest hatchery-produced fish and preserve wild stocks of fish. Sport Fish Division will attempt to maintain liberal harvest limits on all stocked lakes. Some stocked lakes now support fisheries where the objective is to provide the opportunity to catch several large fish. Public support for a wide range of "quality" fisheries is increasing and area management personnel are making adjustments to provide a balance among high harvest, mixed species and trophy fishing opportunities.

Other management issues associated with lake stocking are public access and the sale of fish. Production of all hatchery fish is paid for with funds collected from sport anglers. Consequently, no fish should be stocked unless the public has access to catch the fish. Sport Fish Division will not stock fish in a lake unless there is legally designated public access. In addition, Sport Fish Division hatchery produced fish will not be sold to private individuals or groups since the fish were produced with public funds.

STOCKING GUIDELINES

In cases where triploids are required as a condition of permitted stocking activity, triploids must be certified before release. Fish not meeting certification criteria cannot be stocked into lakes approved for triploid stocking only. All hatchery fish must meet the established ADF&G Fish Health and Disease Control Regulations, Policies and Guidelines at the time of stocking.

Category 1 lakes within the species range can be stocked with any hatchery product (Table 1). There are minimal genetic or disease concerns. The one concern for all lake categories is the illegal removal and transport of fish out of stocked lakes and into other water bodies. The use of certified triploids significantly reduces the genetic risk from this activity. Therefore, triploids (and for rainbow trout, all-female triploids) should be utilized whenever possible.

Category 1 lakes outside the species range can be stocked with mixed sex or all-female triploid rainbow trout, triploids of any other species, or diploid lake trout, in cases where there is no possibility of the stocked fish creating a natural population. Diploid mixed sex rainbow trout can be used in the rare circumstance that there are no or insufficient triploid rainbow trout available.

Category 2 lakes can be stocked with all-female triploid rainbow trout and may be stocked with triploid fish of any other species and diploid lake trout as long as there is no possibility of the stocked fish interbreeding with native populations or establishing a new population. The life history of lake trout makes it highly unlikely that lake trout will escape the lake, establish a naturally reproducing population and compete with native fish.

Category 3 lakes can be stocked with all-female triploid rainbow trout and may be stocked with triploid fish of any other species and diploid lake trout as long as there is no possibility of the stocked fish interbreeding with native populations or establishing a new population. The life history of lake trout makes it highly unlikely that lake trout will escape the lake, establish a naturally reproducing population and compete with native fish. Weired category 3 lakes that have been annually certified as a blockage to fish passage can additionally be stocked with mixed sex triploid rainbow trout; and, in the rare circumstance that there are no or insufficient triploid rainbow trout available, diploid mixed sex rainbow trout.

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Category 4 lakes can be stocked with all-female triploid rainbow trout and under special circumstances triploid fish of any other species as long as there is limited possibility of the stocked fish attempting to interbreed with native populations.

Category 5 lakes should not be stocked except under special circumstances. Any stocking in a Category 5 system should be solely for creating a significant fishery for species not readily available in the area. If circumstances for stocking arise, all-female triploid rainbow trout and triploid fish of any other species may be stocked into systems that do not contain native fish of the species stocked. Reproduction will not occur.

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Table 1: Classification of lakes and recommended stocking products for Sport Fish Division lake stocking projects.

		R	ainbow Tr	out	Arctic	Grayling	Landlock	ked Salmon	Arct	ic char	Lake Trout
		Mixed- Sex	All-F	emale	Mix	ed-Sex	Mix	ed-Sex	Mix	ed-Sex	Mixed-Sex
Lake Type ¹	Lake Category ¹	Diploid	Diploid	Triploid ²	Diploid	Triploid ²	Diploid	Triploid ²	Diploid	Triploid ²	Diploid
Landlocked/Connected	1	Maybe ⁸	Yes	Preferred	Yes ⁴	Preferred	Yes ⁴	Preferred	Yes ⁴	Preferred	Yes ⁵
Intermittent Outlet	2	No	No	Maybe ^{3,4}	No	Maybe 3,4	No	Maybe 3,4	No	Maybe 3,4	Maybe ⁵
Weired ⁶ /Barriered Outlet	3	Maybe ⁸	Maybe ⁷	Yes ^{3,4}	No	Yes ^{3,4}	No	Yes ^{3,4}	No	Yes ^{3,4}	Maybe ⁵
Flood Prone	4	No	No	Maybe ^{3,4}	No	Maybe 3,4	No	Maybe 3,4	No	Maybe 3,4	No
Open Outlet	5	No	No	No	No	No	No	No	No	No	No

¹ See Table 2 for definition of terms.

mixed sex triploid rainbow trout products are available.

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² Stocking of triploids in any particular category is based on the level of certification (See stocking guidelines).

³ Within the species range, it may be stocked only if there is no possibility of the stocked fish interbreeding with native populations.

⁴ Outside the species range, it may be stocked only if there is no possibility of the stocked fish establishing a population.

⁵The life history of this fish makes it highly unlikely that fish will escape the lake, establish a naturally reproducing population and/or interbreed with native

⁶Lakes with a man-made weir must be periodically certified (i.e., pass a test for fish blockage) to be considered category 3 lakes. The recommended period for certification is annually prior to stocking. Weired category 3 lakes that do not pass certification for fish blockage cannot be considered weired category 3 lakes. Weired lakes that are certified for blockage may have all-female diploid rainbow trout stocked into them. Birch Lake in interior Alaska and Cheney Lake in southcentral Alaska are examples of lakes that are certified for fish blockage.

Diploid rainbow trout may only be stocked into category 1 lakes, and weired and certified category 3 lakes in rare circumstances when no all-female diploid or

Table 2. Definition of terms used for lake classification and stocking products.

Lake Type	Definition
Landlocked	There is no outlet; fish cannot escape lake.
Connected Lakes	Two or more lakes connected by streams, but no outlet for lowest lake in the drainage. Fish cannot escape lowest lake.
Intermittent Outlet	Lake is usually landlocked, but fish can escape if high water flows occur.
Weired	Outlet stream is blocked by man-made structure. Fish cannot escape unless weir fails or is compromised. A lake is considered weired if it is periodically certified (i.e., passes a test of blockage). The recommended certification period is annually prior to stocking. Otherwise it is considered intermittent, flood prone, or open as per these definitions.
Barriered Outlet	Outlet stream is blocked by natural structure. Fish cannot usually pass through the barrier and survive.
Flood Prone	Lake is landlocked, but is subject to flooding during high water periods. Fish can escape during floods.
Open Outlet	Lake has outlet stream and fish can move into and out of lake.

Lake Category	Definition
Category 1	Lakes are truly landlocked and fish cannot exit the system. There is no interaction with any wild fish populations except those indigenous to the lake. Few restrictions on fish stocking.
Category 2	Lakes with an intermittent outlet. Snowmelt during heavy snow years may fill lake basin and create a small outlet stream. Fish may periodically escape from a Category 2 lake and compete with wild fish populations. However, the incidence of stocked fish escapement is low. The danger to wild fish populations is also low. Moderate restrictions on fish stocking.
Category 3	Includes weired lakes and lakes with barriered outlets. Fish may periodically escape from a category 3 lake and compete with wild fish populations. However, the incidence of stocked fish escapement is low. The danger to wild fish populations is also low. The primary concern with Category 3 systems is the passage of pathogens from stocked fish to wild fish. Moderate restrictions on fish stocking.
Category 4	Lakes are flood prone. These are small lakes or ponds usually located in the floodplain of a stream and subject to flooding during high stream water flows. Fish can leave the system during flood periods. Moderate to severe restrictions on fish stocking.
Category 5	Lakes with open outlets. Fish are free to pass in and out of the system at will. Stocking not recommended. Stocking may occur under severe restrictions.

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Table 2. Continued

Stocking Products	Definition
Mixed-Sex	These are normal fish that are capable of reproduction.
Mixed-Sex Triploid	These fish have been genetically altered so that most fish are sterile and cannot reproduce. Populations with triploidy rates <100% will contain some fish capable of reproduction. The certification rate for mixed-sex triploids is 95% confident that the triploid rate is 99% or higher.
All-Female Triploid	These fish have been genetically altered so that all the fish are females, sterile, and cannot reproduce. The certification rate for all-female triploid rainbow trout is 95% confident that the triploid rate is 90% or higher.
All-Female Diploid	These fish are capable of reproduction, but a naturally producing population of fish cannot be established because all fish are female.
Drainage	All of the waters comprising a watershed, including tributary rivers, streams, sloughs, ponds and lakes which contribute to the supply of the watershed.

REFERENCES

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Statewide Stocking Plan for Recreational Fisheries. 2007. Alaska Department of Fish and Game, Sport Fish Division. 333 Raspberry Road, Anchorage, Alaska.

http://www.sf.adfg.state.ak.us/Statewide/hatchery/index.cfm/FA/stocking.policy.

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Reviewed by:

Ted Meyers

Chief Fish Pathologist

William D. Templin Principal Geneticist 4/14/0

This policy has been thoroughly reviewed by Sport Fish Division staff in all regions of the State in addition to the state's Genetics and Pathology staff. This policy is approved as an official policy of the Alaska Department of Fish and Game, Sport Fish Division. This policy must be reviewed again in 2012 prior to initiation of stocking from any new Sport Fish Division hatchery facilities.

Charles O. Swanton

Director

Sport Fish Division

DIVISION OF SPORT FISH LAKE STOCKING POLICY